



July 9, 2012

Susan Studlien, Director
Office of Environmental Stewardship
US EPA Region 1
5 Post Office Square, Suite 100
Boston, MA 02109-3912
Attn: Steven Calder (OES 04-2)

VIA EMAIL AND OVERNIGHT DELIVERY

RE: New England Boatworks, Inc., Clean Air Act Reporting Requirements

Dear Ms. Studlien,

Introduction

New England Boatworks (NEB) received a letter from the United States Environmental Protection Agency (USEPA) Region 1 on March 15, 2012 requesting information about the facility and its operation during the period from 2007 through 2011. NEB is in the process of gathering the information requested in the March 15 letter and is providing the information presented below and attached as a partial fulfillment of the USEPA's request. Significant time and expense is needed to gather and prepare all of the information requested and, if possible, we would like to minimize NEB's effort needed going forward. We anticipate this preliminary information will assist you with your evaluation of NEB's operations and compliance status.

Facility Overview

New England Boatworks (NEB) is in the marine services business, operating a yachting center and boat building facility located in Portsmouth, Rhode Island. The yachting center can accommodate dockage for over 360 boats ranging in length from 20 to 150 feet. Services provided by NEB include haul out, launch, and fueling services, both outdoor and indoor boat storage, winterization, and re-commissioning, in addition to full mechanical, electrical, woodworking and finishing to its customers.

NEB also provides marine engineering and design services and maintains a limited boat building operation capable of building two types of boats. These specialized boat building operations include producing high technology composite boats for racing or pleasure boat owners and a separate operation for producing smaller aluminum boats for a variety of uses.

NEB employees engineers, electricians, mechanists, laminators, painters, woodworkers, metalworkers, systems specialists, riggers, general dock support, administrative staff, and project managers.

Recreational composite boats are produced by NEB in Building 10. Boat length and width are limited to approximately 85 feet by 24 feet primarily due to curing room space limitations. These boats are constructed using pre impregnated fibers which are placed on forms to create the hull, deck, and portions of the superstructure. NEB does not employ open molding in their composite boat construction methods. Refer to Section H of the Yard Work description in the response to Question 4 for a detailed description of this operation.



NEB manufactures smaller aluminum boats for a variety of uses in lengths up to 40 feet. These boats are constructed in Building 9. The aluminum boat building process is described in section J of this submittal. Normally coating of aluminum boats is limited to the boat bottom and a limited fraction of the topside. Historically the customers of these boats have been responsible for application of coatings, although, NEB has been responsible for applying coatings to a limited number of the aluminum boats it builds.

The questions and the responses provided below are presented in the order presented in the March 15 letter.

1. Provide the following information about NE Boatworks:
 - a. Describe the ownership and business structure;
 - b. Indicate the date and state of incorporation;
 - c. List any partners or corporate officers;
 - d. List any parent, divisions and subsidiary corporations and any related business entities; and
 - e. Provide the net worth of the NE Boatworks (if not available, provide gross annual receipts from 2007-11).

RESPONSE

- a. **New England Boatworks Inc. (NEB) is a subchapter "S" corporation. The stock is equally held by three partners;**
 - b. **NEB was incorporated 1988 in the state of Rhode Island;**
 - c. **Corporate partners and officers:**
Steven Casella, President
Thomas Rich, Treasurer
David MacBain, Secretary
 - d. **TDS Realty, LLC, NEB Management Corp.;**
 - e. **Gross receipts:**
2007 \$14,351,500
2008 \$16,854,310
2009 \$14,810,998
2010 \$13,257,647
2011 \$17,604,473
2. Provide the following information for the facility owned and/or operated by NEBoatworks (the "Facility"):
 - a. The physical address;
 - b. The date that the Facility began operations;
 - c. The name and phone number of the plant manager;
 - d. The number of employees;
 - e. The size in acres of the property;
 - f. The frontage in feet on a navigable waterway; and
 - g. The name, address, and the date that operations began for any other facilities owned and/or operated by any of the corporate entities identified in l.d above.



RESPONSE

- a. **Address:**
1 Lagoon Road
Portsmouth, RI 02842
 - b. **The facility has been in operation since the 1800's, it was originally owned by the US Navy was sold to the private sector and became a boatyard around 1976. Current owner's purchased in 1997.**
 - c. **Plant manager: N/A Phone: 401-683-4000**
 - d. **108 employees (of which 10 are seasonal – summer – employees)**
 - e. **Approximately 21 acres of upland, approximately 14 acre boat basin (water)**
 - f. **See site map**
 - g. **None**
3. State whether NEBoatworks purchased or acquired its business, equipment, or operations from another company that previously conducted similar work at the Facility. If so:
- a. Provide the name of the company, a description of that company's operations, the dates that the previous company operated at the Facility; and
 - b. Describe how NEBoatworks came to acquire that company's business.

RESPONSE

- a. **Purchased from Coggeshall Marina, Inc. who operated the marina and boatyard from about 1986 until 1997. The operations under Coggeshall were similar to those of current ownership; however, less repair, maintenance, and boat building took place.**
 - b. **NEB purchased the marina as NEB was looking for a permanent home. Prior to purchasing the marina, NEB was a tenant at the Coggeshall Marina.**
4. Provide the following information for the Facility:
- a. A scaled diagram showing all the major features, including but not limited to the buildings, water frontage, and launches;
 - b. A description of each building and structure by its purpose and use, including but not limited to any manufacturing areas, dry docks, spray booths, and painting areas;
 - c. The size and weight capacity for any ship/barge/boat launches or lifts;
 - d. The date that actual construction began on each building or other structure;
 - e. A description of the activities that are conducted within each building or other structure, including, but not limited to, vacuum molding and surface coating operations;
 - f. A description and the specific location of all activities, including but not limited to, surface coating operations that are conducted outside of any building; and a description of any heating, ventilation, air conditioning system, and any type of air pollution control system employed, e.g., particulate or overspray filters.

RESPONSE

- a. **See attached diagram;**
- b. **See descriptions below in "New England Boatworks Facility";**
- c. **NEB operates 3 marine travel lifts all are 22 feet in width and have lifting capacities of: 50, 70 or 88 tons;**
- d. **See exhibit "A" – "Vessel Detail Summary" spreadsheet;**
- e. **See descriptions below in "New England Boatworks Facility";**
- f. **See descriptions below in "New England Boatworks Facility";**



New England Boatworks Facility

NEB facility occupies approximately 21 acres of land and includes 13 major buildings and a number of smaller buildings as well as amenities for its customers. Some of the amenities present on site include a pool, restaurant and associated indoor and outdoor venues. The restaurant (a tenant of NEB) is seasonal and open to the public.

NEB operates a travel lift and maintains internal roadways to provide access to various areas of the yard and to provide boat owners access to their vessels while in storage.

The following paragraphs provide an overview of each of the facilities at NEB and the operations performed in each facility, with an emphasis on coating operations.

Building #1:

This building is an older Quonset hut type building with a wooded addition added to the north end. The addition is a lean-to type construction attached to the back half of the building which is used for storage of masts. The building is heated by forced hot air. Utilization of this building is broken down to front end, or south half, and north end, or back half. The building is not high enough to allow Travel Lift access so all boats moved in or out of this building utilizing trailers.

Front End Primary Use:

- 1) This end of the building is used to house the yard and rigging personnel and their miscellaneous equipment including: Travel Lift straps, golf carts, fuel caddies, spreader bars, etc.
- 2) Small parts, both metal and composite parts, are prepped and painted here. There is an enclosed automotive type spray booth. This booth was manufactured by Binks and is approximately 12 feet by 24 feet
- 3) Often smaller yachts are moved in for miscellaneous maintenance and repair work.
- 4) The eastern side of this building houses workers bathroom, storage and employee break room

Back End Primary Use:

- 1) Storage of yachts in the winter.
- 2) Miscellaneous maintenance and repair work is performed in this section. This work is limited to mechanical and painting.
- 3) There is a small enclosed sand blaster.

Building details:

Total square footage: 7,550 sq. ft

Front half: 4,000 sq. ft

Open work space approximately

Back Half: 2,700 sq. ft

Lean to: 850 sq. ft

Building #2

This building is unheated and has a shell floor. The primary use is dead storage, which consists of both summer and winter storage. Occasionally light maintenance is performed in this building. Large sliding doors allow access with either the Travel Lift or trailer. No painting or major projects are conducted in the storage buildings.



Building details:

Building size: 9,800 sq. ft

Building #2A

This building is unheated and also has a shell floor. Primary use is dead storage. Occasionally light maintenance is performed in this building. Large sliding doors allow access with the travel lift or trailer. No major projects or painting are conducted in this building.

Building details:

Building size: 9,800 sq. ft

Building # 3

This building houses our office and offices of tenants at NEB, which including "The Ships Store", a marina chandlery, a marine brokerage company, as well as, public bathrooms for our marina and yard customers. The building is heated with forced hot water. No boats go into this building; therefore, there are no painting or maintenance activities in this building.

Building #4

This building is a pre-engineered steel structure which is heated by under slab radiant heat. The building is protected via a closed CO₂ fire system. The building is used for repairs and refits. It is also the primary place where painting operations are performed. Large sliding doors allow access with the travel lift or by a trailer.

Building details:

Building size: 6,000 sq. ft

Building #5

This building is "L" shaped and was built at two separate times. It is heated by under slab radiant heat. This building is used for repairs and refits including occasional painting of boats and components. Sometimes the new construction boats are moved to this building if there is an overload in buildings 9 thru 11, or if additional height is required. The building is accessed from the north by large swinging doors and from the east via large sliding doors allowing travel lift and trailer access.

Building details:

Building size: 9,000 sq. ft

Building #6

This building is an older Quonset hut that is rented to an unrelated third party and is operated as a restaurant. It's heated via forced hot water.

Building details:

Building size: 6,000 sq. ft

Building # 7

This building is an older Quonset hut that houses the joiner and carpenter shops. The back, or east end, of the building is primarily used for storage of stock. However, it does house a table saw as well as a thickness planer. The dust collection system for this building is also in the east end of the building. The front half on the ground level is used to build joiner, interior components, and for repair. Most work done here is wood related; however, sometimes composite



components are worked upon. Upstairs in this area is a suck table and an enclosed varnish room. The building is heated with a propane fired forced hot air system.

Building details:

Building size: 4,000 sq. ft

Building #8

This building is a two story building that was constructed in 2010. It is heated by propane fired, forced hot air. The lower level houses a stock room, an employee break room and employee heads, as well as an additional set of heads for our marina guests. The second floor is used as office space and extra storage. The front half or water end is used for production and engineering offices and the back half is purchasing, guest captain offices and storage. No boats are stored or worked on in this building.

Building details

Total Area: 10,000 sq. ft

First floor: 5,000 sq. ft

Second floor: 5,000 sq. ft

Building #9-10

This building was also constructed in 2010, and is divided into 4 work areas; the north side we refer to as building 9 and the south side as building 10.

North side #9:

The lower level is used for metal fabrication. This includes the construction of aluminum vessels, normally less than 40 feet in overall length, and the building of other metal components. Most metal vessels are built of aluminum and other structures are usually aluminum or steel.

The upper level of this building is used as a metal machine shop and fabrication shop for smaller components, using the following metals: stainless steel, aluminum, steel and titanium. This shop also houses some of our technicians who do work on hydraulic components or other boat systems. No boats are stored, repaired, or constructed on the upper level of Building 9.

South Side #10

The lower level is used primarily for new composite boat construction. It currently is occupied by a removable clean room which we utilize to carefully control the environment, both heat and humidity, as needed for our high tech composite structures.

The upper level is used primarily for the construction of smaller composite parts. The upper level also houses a 5-axis CNC milling machine.

All of building 9-10 has roof top, propane-fired heat and air-conditioning, in addition, there is under slab radiant heat on the lower levels of both sides. In addition, a climate control system is in place using the "Air-max" air system. This system circulates and filters the air; it can draw either fresh outside air or recycle the inside air.

Boats loaded or unloaded into or out of the lower level require a trailer as the travel lifts will not fit.



Building details:

Total area: 16,800 sq. ft

Building 9 side: 8,400 sq. ft – 4,200 sq. ft upper and lower levels

Building 9's work space is limited by the stairways, employee bathroom, machinery, and office spaces

Building 10 side: 8,400 sq. -ft – 4,200 sq. ft upper and lower levels

Building #11

This building is a prefabricated steel building and is heated using under slab radiant heat. The building is used primarily for new boat construction. During slack periods the building may be used for repair and refits.

Building details:

Building size 4,000 sq. ft

Building #12

This is an older wooden structure built by the Navy. It is heated via forced hot air. The building houses our electrical, mechanical and HVAC technicians. Most of the time, these techs are working on boats in the throughout the yard. There are work benches where they will prefab, rebuild, and etc. smaller mechanical components prior to installing them. No boats are stored, repaired, or constructed in this building.

Building details:

Building size 4,000 sq. ft

Yard work or work performed outside

NEB is a full service boatyard. Boats are stored and serviced, both in the water and on land. NEB rents all its numbered slips on a seasonal basis. These boats normally do not require much work, and the work which is done is normally mechanical in nature. Some minor carpentry, varnish and minor paint touch ups are performed.

Boats are also stored on land or hauled for maintenance. Repairs of all types take place in the yard. Most of these repairs are mechanical, carpentry, repairing of rails, rudders, running gear, etc. Painting outside is limited to rolling of bottoms, and minor touch-ups and repairs. No Spray painting of larger areas, hulls or decks, is allowed outside to prevent damage (overspray) to other boats in the yard.

In the winter months the outside spaces are typically full of boats being stored for the winter. The majority of these boats are hauled, their systems are winterized and then they are launched in the spring. Many have their bottoms painted while on land. This typically consists of a light sanding (dustless sanders are required) then the bottoms have antifouling paints rolled on. Some boats have their topsides and or decks compounded and waxed prior to re-launching. Once launched, the boats are summerized; that is, having their systems started for the season.

Typical repair jobs done at NEB consist of:

- A) Topside painting (performed inside)
- B) Bottom painting
- C) Compound and wax



- D) Mechanical (no painting applications)
- E) Metal fabrication
- F) Carpentry or joiner work
- G) Rigging – Yard
- H) Boat building composite
- I) Boatbuilding aluminum

A) Topside painting (performed inside)

NEB provides topside painting operations on customer boats. These are typically pleasure craft or racing (sail) boats, where the customer requires a high-quality, detailed finish using coatings developed for these high gloss and, or, high performance purposes. Customer needs vary and there are times that only topside work is performed, therefore, we have provided separate detail for topside versus bottom coating operations. We have assumed a 45 foot fiberglass yacht for the following example.

Time is based on hours or days to complete a task and does not account of the number of people performing the task. It is also based on how NEB would normally man the job. It is typical that a team of painters would work on a vessel. A 45 foot boat would typically have between 3 and 7 men working on it at any time.

- 1) Removing the mast or other higher structures. (4 to 6 hours)
- 2) Hauling the boat from the water or moving it into prep or paint building. (1 to 2 hours)
- 3) Staging of the vessel. All vessels need to be staged to OSHA requirements and all staging needs to be inspected prior to use. (3 to 6 hours)
- 4) Sanding of the surface to be painted: The topsides need to be washed and thoroughly sanded to remove all dirt, wax grit and other build-up. They then need to be sanded to a reasonable level to allow the primer to be applied. (2 - 3 days)
- 5) Repair of damaged areas: Prior to priming and after sanding, the vessel needs to be repaired and any scratches, dents, delaminations, or corrosion areas need to be removed. This normally would require, grinding of the affected area, rebuilding of the laminate, and filling of the affected areas. The filling process would typically be 2 to 5 fills pending size and depth each fill and will require drying time of 4 to 24 hours. (1 – 4 days)
- 6) Spot priming or “High Building” of the repaired areas. The repaired area is typically “high-built,” which fills in any minor depressions and pin holes in the filler material. High build requires an overnight dry before re-sanding. (2 days)
- 7) Priming. Once the repairs are completed, the entire surface is primed. NEB typically uses AwlGrip 545 primer and typically 2 coats are applied with a drying time of about an hour between coats. (1 day)
- 8) Once the primer is dry, then the boat is to be carefully re-sanded. Any further imperfections are addressed. These are typically small areas or pin holes and are filled with a surfacing material such as Duratec Fairing Putty (DUPUG). These areas are then re-sanded and sometimes re-primed. (1 - 3 days)
- 9) Once the Priming and pin holing is complete and sanded, the boat is totally re-cleaned and taped, or masked-off, prior to applying the top coat. Top coat is applied normally in 4 or 5 different shootings with drying times between coats. A typical topsides paint job takes about 6 to 8 hours. (1 day)
- 10) Once the boat is painted, it needs to sit untouched for a minimum of 24 hours, 48 hours are preferred, prior to further work being started. (1 or 2 days.)



- 11) The next step normally includes the layout of strips and graphics. These areas are carefully laid and taped out. The areas of the strips/graphics are then very carefully sanded. (1 day)
- 12) Once the strips and graphics are laid out and sanded, the vessel is again cleaned and shrouded (protected from overspray). (1 day)
- 13) Once the vessel is cleaned and the strips laid-out and sanded, the topsides of the vessel needs to be covered in order to protect the topsides that have been painted. Once the covering is complete the strips are wiped down and sprayed with 4 or 5 coats which require drying times between each coat application. Typically, this takes somewhat less time than topside coating, but not significantly less time, as there is still drying times between the coats. Typical times would be 3 to 7 hours. (1 day)
- 14) Once the strips are complete, the boat needs to cure for 24 hours. (1 day)
- 15) Removal of tape and coverings, and finally, the removal of the staging. (1 day)
- 16) The boat needs to sit for a minimum of 3 days, preferably 5 to 7 days, to allow the paint to harden enough that the travel lift straps do not leave marks on the fresh paint. (3 to 7 days)

B) Bottom painting

There are numerous different types of boat painting jobs the most common is the scuff and roll.

The scuff and roll. This is a typical bottom job for a boat that most likely lives in the water for about 6 or 8 months and remains on land for the remainder of the year.

- 1) The first step is to haul the vessel and pressure wash the bottom paint, removing any growth, or slim build up.
- 2) The second step is to place the boat on jack stands, poppets, or in a cradle.
- 3) The next step is the scuff. This is a quick, fairly light sanding. The purpose of the sanding is to remove any loose paint and put some scratches in the old paint, which allows the new paint to mechanically, as well as chemically, adhere to the old coating.
- 4) In the next step, the boot top is taped off and the bottom is rolled with 1 or 2 coats of paint. Depending on the type of bottom paint requested by the customer, re-coat times can range from immediate re-coating to requiring a 24 hour dry cycle.
- 5) Once the bottom paint is applied the boat must be "Fleeted." Fleeting is the process of relocating the stands or moving the vessel in the cradle so that the process of scuffing and rolling can be performed on the areas where the jack stands, poppets, or cradle were previously located.
- 6) Once completed, the paint normally requires between 12 and 36 hours before it can be lifted and launched.

C) Compound and wax

Most Fiberglass boats have their topsides compounded and waxed. Some boats will have their decks done as well. This is normally done outside and takes the better part of a day for the topsides on an average 45 foot boat.

D) Mechanical (no painting applications)

These jobs are much harder to describe as boats come in for all different types of mechanical work. These jobs can range from a simple oil change, to new cutlass bearing, or to new engine. Some of these jobs are HVAC oriented or system oriented (plumbing of heads or sinks, etc.).



E) Metal fabrication

Some of our work orders are metal fabrication only. These jobs also vary greatly in their size and complexity. Most of this work is completed (and if the metal is Stainless Steel, it's polished) and delivered or installed on the boat. If its aluminum it is usually sent out to be anodized or left bare, on rare occasions the components are painted.

F) Carpentry or Joiner

Carpentry, or Joiner, work refers to wood working that is performed on the various vessels. These jobs vary greatly in size and duration of the project. Larger jobs like installing a new Teak deck can take several months to complete. Smaller jobs can be completed in a few hours to a few days. These jobs include things like repairing hatches, replacing wood that has water damage, installing teak shower grates, repairing damaged toe rails, modifying interiors, adding or removing shelves, table tops, cabinets, etc. Most of the larger jobs like teak decks are sanded and then left to weather. Other items are sanded and varnished. Varnishing takes days to do as typically only one coat can be applied per day. The preparation is normally longer than the actual application of the varnish.

G) Rigging – Yard

Many boats come to NEB for yard and rigging work. Often we haul, pressure wash, and launch boats, and no other work is performed. This is most typical with racing sail boats. These boats normally do not have anti-fouling bottom paint on them and are basically dry sailed. Dry sailed means that they are only in the water or launched for a specific event or period of time. "Dry Sailing" allows the boats bottom to be a hard epoxy or similar finish which is smoother and harder than anti-fouling. Other boats are stored on land for longer periods of time, as the owners do not have time or money to use the boat and find it less expensive to leave the boat on land.

Rigging most rigging jobs involve something to do with the mast, sails, roller furlers, outriggers, or tender support systems. These jobs vary in size some time NEB will unstep a mast so that the standing rigging, spreaders or other appurtenances are inspected and/or modified. Sometimes the rigging crew unsteps a mast so that the vessel can be moved into a building for other work, such as a paint job, new teak deck, or even a new engine.

H) Boatbuilding Composite

New England Boatworks Inc. builds custom, one-of-a-kind boats, utilizing both aluminum and composite materials. This section describes the composite boat building. Composite boats built by NEB are typically high tech pre-impregnated epoxy construction. Since 2007, NEB has built 10 custom boats. NEB has just begun construction on the 11th boat. The normal build time is about 9 months, but can vary depending on the size and type of boat being built.

A description of a 70 foot racing sail boat is discussed. This reflects, very closely, five (5) of our last ten (10) builds. Another similar build was a 55 foot day sailor built effectively the same way; timing was also fairly similar, although the construction was interrupted by a fire in 2009. Three (3) of these ten (10) boats were aluminum and one (1) was basically a wooden boat with a fiberglass skin.

Building a 70 foot race boat is done one of two ways at NEB: male plug or female mold. The major difference is in a female tool the boat is laminated inside of a prebuilt tool which is



already faired. The Male tool is a wooden plug that is constructed slightly smaller than the actual boat and the boat is then laminated over that plug and then faired and painted after. The female tool adds about 7 to 9 weeks to the build time and costs more, as we basically build or have a male plug built and faired before laminating. All of our true composite boats delivered since 2007 have been high tech Pre-impregnated boats.

Building sequence for a composite boat:

- 1) Building the hull plug is normally about a 7 week process and involves cutting of plywood frames.
 - a) These frames can either be cut in house or subbed out to a CNC machine. (2 weeks)
 - b) The frames are then erected on a steel jig and leveled. Once erected the frames are then skinned over with multiple layers of plywood or cold molded with strips of popular wood. (3 weeks).
 - c) The plug is then covered with a very thin layer of fiber glass (1 or 2 days).
 - d) The plug is then faired and primed. The fairing procedure takes most of the time as fairing compound is applied normally by trowel. This is then planned or sanded down and the process is repeated. After this is accomplished and the shape is very close a heavy coat of primer is sprayed on this is then sanded and polished and then the tool is ready to be waxed and laminated on. The fairing normally takes about 2 weeks of which about 6 of the 10 days is fairing and the remaining 4 days consist of 1 day of spraying on primers and the remain are sanding and polishing. (2 weeks)
- 2) Hull lamination is typically the next step; this normally takes about 8 weeks.
 - a) The first step is to wax the tool so that the laminate doesn't stick to the tool. This takes a few days. (2-3 days)
 - b) The next step is to laminate the first, or in the case of a male molded boat, the inner skin. This involves applying multiple layers of pre-preg. Pre-Preg is a pre-impregnated cloth, in this case carbon fiber. The cloth is impregnated with a controlled amount of epoxy resin in a controlled environment at the supplier's factory. We primarily use Gurit or SP systems that impregnate the materials in England and then ship it to use in a frozen state. The laying of the layers normally takes 1 to 2 weeks. (1-2 weeks)
 - c) The boat is then post cured at an elevated temperature to cure the epoxy resins. During this cycle, and all curing cycles, the boat or components are under vacuum in a closed system. This is a 2 days process between insulating, vacuum bagging and curing. (2 days)
- 3) Core fitting. At this time the core is fit to the hull. This requires that the core be cut bent and carefully fit and epoxied to the hull. This will again take about 2 weeks.
- 4) Extra laminates. Either before or after the core is installed, or sometimes both, additional laminate is added in the areas of high load fittings, such as keel or rudder, chain plates etc. This normally takes about 1 week. The core is also cured at elevated temperatures again, 1 to 2 days.
- 5) Outer hull laminate. The outer hull is then applied. This is very similar to the inner laminate and takes about the same amount of time, 1 to 2 weeks. The part is then cured again, 1 to 2 days.
- 6) Typically during the time that the hull is being built, there is another team of laminators building internal structure and internal components. Each of these structures or components is built using the same basic procedure used in the construction of the hull.



- The main difference is the size of these structures or components is very small relative to the hull. Often times the tool or plug used to build the component is not faired.
- 7) The deck is then built. This is a very similar process to building the hull and requires the same amount of time.
 - 8) Once the hull is built, the internal structures are installed as they become available. This often takes about 10 weeks or so.
 - 9) Once the deck is built and the internal structures are built and installed, the deck is installed on the hull. This process involves cutting and fitting the two pieces so that they closely fit together closely. This typically takes about 2 weeks.
 - 10) After the deck is installed, the deck gear and final outfitting is completed. Once the major gear is completed the hull and deck are then painted. This paint job is very similar to a typical topsides job, the biggest exception is that there is more time spent fairing the hull prior applying primer. The fairing is usually started about half way thru the installation of the internal structures. Final out fitting typically takes about 6 to 8 weeks.

I) **Aluminum Boatbuilding**

New England Boatworks also builds boats out of aluminum alloy. Many of these boats are manufactured for Naiad of Newport, and NEB acts as their subcontractor and builds the aluminum portion of the boat for them. The boats are normally removed from NEB for the final outfitting and painting. The exception to the painting is that in some instances NEB or Naiad personnel will paint the boat's bottom in our shop. The painting of the bottoms is normally done by rolling on epoxy primers followed by anti-fouling paint.

In addition to the Naiads, NEB has built 3 aluminum boats that carry NEB hull numbers. The construction of these is very similar to that of a Naiad. The biggest difference is that NEB completely outfits and paints these vessels. Of the vessels that NEB built 2 of the 3 had bottom paint only on the exterior, interior components that were non-aluminum were painted. All other aluminum surfaces were untreated or had stick down non-skid mat applied. The third of the NEB projects had no paint at all.

Naiad builds Naiads that vary in size from about 4 meters to 12 meters. The larger vessels take longer to construct and are more commonly built. The build description here is for a typical 10 or 11 meter boat. NEB typically builds only the aluminum portion of the boat. Typical build times are about 10 weeks from receipt of materials.

Building sequence for an aluminum boat:

- 1) The first step is to get the aluminum plate and frames pre-cut and delivered to the yard. We then assemble the parts on a steel jig. The frames are installed onto the jig this takes about 2 weeks, including all longitudinal etc. (2 weeks)
- 2) The hull is then plated estimated time about 1 week. (1 week)
- 3) The boat is then removed from the jig and turned right side up. At this point the remaining frame work, etc. is constructed. The tube carriers are installed. Tanks and conduits are bolted or welded into place. This would typically take another 3 weeks. (3 weeks)
- 4) The deck is then welded down, about half of week. (1/2 week)
- 5) The console or deck house is then built and installed which typically take 3 to 5 weeks. (3-5 weeks)
- 6) The boat is then removed by Naiad to be painted and outfitted. Bottom painting consists of grinding the bottom to clean and give the paint something to adhere to. Epoxy primer and anti-fouling coatings are applied.



On some occasion the boats get their bottoms painted at or by NEB. Since 2007 NEB has built 34 Naiad's and has completed paint related work, or painted the bottoms, on 10 of them. There has been no paint related work since 2008 with one exception in 2010 when NEB performed the pre-painting prep work; NEB did not paint the boat.

5. For each ship, barge, buoy, boat or other vessel (referred to below collectively as "Vessels") built, constructed, and/or repaired by NE Boatworks at the Facility from January 2007 to the present, provide the following information:
 - a. The name of the Vessel;
 - b. The type of Vessel (military, pleasure craft, commercial, etc.);
 - c. The primary material of the Vessel (wood, metal, fiberglass, etc.);
 - d. The basic dimensions of the Vessel (length, width, and depth in feet);
 - e. The approximate surface area of the hull and topside of the Vessel, if applicable (in square feet);
 - f. The year and month construction began and ended;
 - g. The type of work conducted on the Vessel (construction, repair, cleaning, etc.);
 - h. The type of coating used on the Vessel, if applicable (see the categories specified in 40 CFR Part 63, Subpart II, Table 2, or the definitions section of 40 CFR Part 63, Subpart VVVV where applicable); and
 - i. The approximate Vessel surface area that was coated, if applicable.

RESPONSE

- a. See exhibit "A" – "Vessel Detail Summary" spreadsheet;
 - b. See exhibit "A" – "Vessel Detail Summary" spreadsheet;
 - c. See exhibit "A" – "Vessel Detail Summary" spreadsheet;
 - d. See exhibit "A" – "Vessel Detail Summary" spreadsheet;
 - e. See exhibit "A" – "Vessel Detail Summary" spreadsheet;
 - f. See exhibit "A" – "Vessel Detail Summary" spreadsheet;
 - g. See exhibit "D" – "AS APPLIED 2007_2011" spreadsheet, "Product_by_Boat" tab;
 - h. See exhibit "D" – "AS APPLIED 2007_2011" spreadsheet, "Product_by_Boat" tab;
 - i. Generally unknown.
6. For each coating or resin that NE Boatworks has purchased for the Facility from January 2007 to the present, provide the following information:
 - a. The name of the coating or resin;
 - b. The type of the coating (e.g., paints, thinners, cleaners, latex products, solvents, fairing compounds, adhesives-see the categories specified in 40 CFR Part 63, Subpart II, Table 2, or the definitions section of 40 CFR Part 63, Subpart VVVV where applicable) or resin (e.g., gel coat, skin coat, resin, hardener, filler, promoter, catalyst);
 - c. Indicate if the coating contains: nickel, cadmium, lead, manganese, chrome, and/or methylene chloride;
 - d. The total Volatile Organic Compound ("VOC") content of the coating in lbs VOC per gallon of coating. The VOC content must come from the manufacturer of the coating. If the manufacturer provides a range, use the upper bound of the range;



- e. The total Hazardous Air Pollutant ("HAP") content of the coating in lbs HAP per gallon of coating. The HAP content must come from the manufacturer of the coating. If the manufacturer provides a range, use the upper bound of the range;
- f. The coating density in pounds of coating per gallon of coating; and
- g. The annual amount of coating/resin purchased each year from 2007 through 2011 (in gallons).

RESPONSE

- a. See Exhibit "C" – "2007-2011" Received (Purchased)" spreadsheet;
- b. See Exhibit "C" – "2007-2011" Received (Purchased)" spreadsheet;
- c. See Exhibit "C" – "2007-2011" Received (Purchased)" spreadsheet;
- d. See Exhibit "C" – "2007-2011" Received (Purchased)" spreadsheet;
- e. See Exhibit "C" – "2007-2011" Received (Purchased)" spreadsheet;
- f. See Exhibit "C" – "2007-2011" Received (Purchased)" spreadsheet;
- g. See Exhibit "C" – "2007-2011" Received (Purchased)" spreadsheet;

7. For each coating "as applied" at the Facility from January 2007 to the present, provide the following information:
- a. The name of each coating as applied;
 - b. Name of the vessel that the coating was applied to if known;
 - c. The as-applied VOC content of each coating by taking into account any and all additives and thinners added to the as-purchased coatings;
 - d. The as-applied HAP content of each coating by taking into account any and all additives and thinners added to the as-purchased coatings; and
 - e. The coating density in pounds of coating per gallon of coating; and
 - f. The annual amount of each coating as applied (in gallons).

RESPONSE

- a. See Exhibit "D" – "As-Applied 2007-2011" spreadsheet;
- b. See Exhibit "C" – "2007-2011" Received (Purchased)" spreadsheet;
- c. See Exhibit "C" – "2007-2011" Received (Purchased)" spreadsheet;
- d. See Exhibit "C" – "2007-2011" Received (Purchased)" spreadsheet;
- e. See Exhibit "C" – "2007-2011" Received (Purchased)" spreadsheet;
- f. See Exhibit "C" – "2007-2011" Received (Purchased)" spreadsheet;

8. Provide the amount of VOCs emitted annually from the Facility for each year from 2007 through 2011.

RESPONSE

Year	Pounds	Tons
2007	16,392	8.20
2008	16,608	8.30
2009	13,422	6.71
2010	8,469	4.23
2011	10,079	5.04



9. Provide the amount of HAPs emitted annually from the Facility for each year from 2007 through 2011.

RESPONSE

<u>Year</u>	<u>Pounds</u>	<u>Tons</u>
2007	5,492	2.75
2008	4,792	2.40
2009	4,271	2.14
2010	2,763	1.38
2011	2,955	1.48

10. Identify the highest or peak amount of VOCs emitted from the Facility from January 2007 to the present during any one day (in pounds) from:
- The coating of wood substrates;
 - The coating of fiberglass substrates;
 - The coating of metal substrates; and
 - All coating at the Facility.

RESPONSE

This information is not available as records of this type were not maintained.

11. For the Facility, from January 2007 to the present, estimate the maximum hours per day, days per week, and weeks per year NE Boatworks painted and coated hulls, decks, and components of Vessels and other items. In addition:
- Explain the reasons for the current painting schedule; and
 - Explain any physical and/or operational limitations that would prevent NE Boatworks from painting 24 hours/day, 7 days/week, 52 weeks/year.

RESPONSE

In general, the maximum hours per day, days per week, and weeks per year NEB painted and coated hulls, decks, and components of vessels and other items is not available as records of this type were not maintained.

- NEB does not have a set painting schedule since coating vessels is a minor portion of the work performed. Vessels are coated based on construction schedule and work orders from boat owners requesting this type of work.**
- There are a number of factors that limit the coating operations at NEB. As for new construction coating operations, they are limited by the time in which a boat can be constructed which can be a period as short as 10 months up to a period lasting upwards of two years. This is dependent upon the size of the vessel and the order in which vessels are constructed. All coating operations of new vessels are performed indoors; therefore, the only limitation of coating operations is the temperature and humidity conditions. The vessels are only coated during conditions under which the manufacturer will guarantee the coating performance.**

For repair/maintenance operations, there are several conditions that limit the coating operations. The major limitation is the space limitations in the yard. The presence of boats stored in the yard along with other amenities (restaurant, pool, etc.) available at NEB as well as general public access to the facility do not allow for spray painting to be performed outside. Other major limitations are the coating environment is which the



manufacturers will guarantee the performance of their coatings, space limitations (overspray), vessel maintenance work schedules, etc. In general, any coating operation performed outdoors is completed using brushes and/or rollers to limit overspray to other vessels. Usually, the outdoor vessel coating is limited to touch-up work. All major coating (entire topside, decks, etc.) operations are performed indoors so that the coating application can be performed in the most professional manner and not affect other boats in the yard. This manner includes a smooth, even finish, which eliminates the major shrouding required when performing coating outdoors.

12. Describe the methods by which coatings are applied at the Facility, including the methods that each paint and other coating is applied (e.g., brush, roller, spray gun) by type of part and product produced. For each method, also provide an explanation as to why different methods are used in different circumstances.

RESPONSE

Coating operations are performed using brushes, rollers, and spray guns. Brushes and/or rollers are generally used outdoors. This reduces the need to shroud the vessel for others in order to eliminate overspray onto other vessels. Spraying is performed indoors, where there is a lesser concern for wind, temperature, and humidity.

13. List the spray guns currently on-site at the Facility. For each individual gun, provide the following information:
 - a. The manufacturer;
 - b. The model number;
 - c. The nozzles used;
 - d. The actual operating pressure range by nozzle used (in pounds per square inch);
 - e. The maximum flow rate (in gallons per hour);
 - f. The month and year of acquisition or purchase;
 - g. The owner.

RESPONSE

NEB is still in the process of gathering some of this information. However, NEB owns 8 spray guns. All of them are SATAJET 1000 K HVLP guns. A 1.0 nozzle is used when applying topcoats and a 1.6 nozzle is used when applying primers.

14. For each temporary or permanent spray booth at the Facility from January 2007 to the present, provide the following information:
 - a. The name/identifier and location of the spray booth;
 - b. The date that actual construction began on the spray booth;
 - c. The date that actual construction was completed on the spray booth;
 - d. The date that any surface coating operations began in the spray booth;
 - e. A description of any air pollution control equipment;
 - f. A description of any best management practices utilized to limit air pollution from the spray booth.

RESPONSE

NEB is in the process of gathering this information.



15. Provide copies of all correspondence NE Boatworks (or any of its predecessors) has had with state and/or federal environmental agencies regarding emissions of air pollution at the Facility, including, but not limited to, copies of:
- a. All permit applications;
 - b. All permits issued; and
 - c. Any requests for permit modifications.

RESPONSE

NEB is in the process of gathering this information.

We hope this letter and attached information provides you with a better understanding of New England Boatworks operations and emissions. We look forward to meeting with you on July 16, 2012, to review this information, answer questions you may have, and discuss the next step moving forward.

Sincerely,

WOODARD & CURRAN INC.

Glenn T. Almquist
Senior Vice President

GTA/TE

Enclosure: Site Plan
 Spreadsheet Key
 Exhibit "A" – "Vessel Detail Summary" spreadsheet
 Exhibit "B" – "VOC Product Master" spreadsheet
 Exhibit "C" – "2007-2011 Received (Purchased)" spreadsheet
 Exhibit "D" – "As-Applied 2007-2011" spreadsheet

cc: David McBain, NEB
 Tom Rich, NEB